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EXAMINER

HICKS, MICHAEL J

ART UNIT PAPER NUMBER

2165

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/029,942

Applicant(s)

KWON ET AL.

Examiner

Michael J. Hicks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

1. Claims 1-10 Pending.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-7, and 9 rejected under 35 U.S.C. 102(b) as being anticipated by Anerousis ("An Architecture for Building Scalable, Web-Based Management Services", Journal of Network Systems Management, Vol. 7, No. 1, 1999).

As per Claim 1, Anerousis discloses a system for statistically processing messages comprising (i.e. *"We use one Marvel server for every group of users served by the same cable operator (i.e. that share the same head-end). These servers operate at level 1. At the second level of the hierarchy, another Marvel server provides global monitoring statistics for the entire Sail network. Summarizing performance such as bandwidth usage in this environment is very attractive because not only does it give statistics for larger sets of the user population, but also helps in planning system capacity and the number of served users at every branch of the cable distribution system."* The preceding text excerpt clearly indicates that the system performs statistical processing on messages passed through a network.) (Page 96, Paragraph 3; Page 97, Paragraph 1): a message compiler for compiling upstream and downstream messages of a network controller (i.e. *"Sail consists*

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*of a head-end router which multiplexes all user traffic on the CATV channel a terminal server, and cable modems (one per user) that terminate the upstream and downstream channels and route the collected packets onto a local Ethernet on which the user has connected a number of PCs or workstations...We use one Marvel server for every group of users served by the same cable operator (i.e. that share the same head-end). These servers operate at level 1. At the second level of the hierarchy, another Marvel server provides global monitoring statistics for the entire Sail network."* The preceding text excerpt clearly indicates that the messages from which the statistics are formed are upstream and downstream messages passed through a network controller.) (Page 96, Paragraph 3); **a database for storing data** (i.e. *"The server periodically obtains information from the cable modems through a low level monitoring and control protocol and updates the appropriate objects. A separate object contains aggregated performance information for the group and also a table attribute which is used to sort individual user information based on usage or error rates."* The preceding text excerpt clearly indicates that the data is stored and aggregated in a database.) (Figure 7; Page 97, Paragraph 4); **a message storage unit for storing the messages in the database when an amount of the messages compiled in the message compiler reaches a predetermined level** (i.e. *"Marvel allows browsing through performance data with better granularity (data collection from the network occurs every five minutes) and freshness (all information is at most 5 minutes old). It further integrates monitoring and control of components from different manufacturers (cable modems, terminal servers and head-end routers) under one user interface."* The preceding text excerpt clearly indicates that the messages are stored in the database when they reach a predetermined level (e.g. at a predetermined interval).) (Page 98, Paragraph 2; Page 99, Paragraph 1); **a statistical function handler for performing statistical processes on the messages stored in the database according to functions designated by a user** (i.e. *"Summarizing performance such as bandwidth usage in this environment is very attractive because not only does it give statistics for larger sets of the user population, but also helps in planning system capacity and the number of served users at every branch of the cable distribution*

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*system. In addition measuring the error rates for different groups of users can help to identify areas with transmission problems and sometimes pinpoint the location of the problem...In addition to the above performance summarization features we also support customer views through objects that represent "user profiles". These objects combine account information from the user registration database with per-user temporally aggregated performance measurements. Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel). Time series are visualized using a special Java applet that displays a chart and allows scrolling and zooming for more careful examination of the data."* The preceding text excerpt clearly indicates that statistical processes are performed on the data at the request of a user, and that the user may designate which statistical processes are performed for viewing.) (Page 97, Paragraphs 1, 3); and a statistical result value storage unit for converting the results from the processes performed by the statistical function handler into a file of a predetermined format, then storing the file as a target table in the database (i.e. *"We have found that the Marvel system has many advantages over commercial network management applications because performance aggregations can be stored and accessed at any time...In addition to the above performance summarization features we also support customer views through objects that represent "user profiles". These objects combine account information from the user registration database with per-user temporally aggregated performance measurements. Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel). Time series are visualized using a special Java applet that displays a chart and allows scrolling and zooming for more careful examination of the data."* The preceding text excerpt clearly indicates that the data may be stored in the database at any time. Also note that in order for the data to be accessible from the database, as the text excerpt demonstrates it is, it must be stored in a predetermined format which is readable by the database.) (Page 97, Paragraphs 2-3).

As per Claim 3, Anerousis discloses a main memory in which results of the statistical processes performed by the statistical function handler are stored (i.e. *"We have found that the Marvel system has many advantages over commercial network management applications because performance aggregations can be stored and accessed at any time."* The preceding text excerpt clearly indicates that the aggregated views of the data (e.g. data on which statistical processes have been performed) may be stored in the database at any time.) (Page 97, Paragraph 2).

As per Claim 4, Anerousis discloses the message storage unit, if the amount of messages compiled in the message compiler reaches the predetermined level, divides the compiled messages into downstream and upstream messages (i.e. *"Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel)...An event log browsing facility is also provided for examining detailed event traces that are not transmitted to the client."* The preceding text excerpt clearly indicates that the messages are divided into downstream messages (e.g. messages about the downstream characteristics associated with and viewable by the user) and upstream messages (e.g. other messages associated with the network and which are not viewable to the users).) (Page 97, Paragraph 3; Page 99, Paragraph 3) and performs storage by converting them into a database format according to the division (i.e. *"In addition to the above performance summarization features we also support customer views through objects that represent "user profiles". These objects combine account information from the user registration database with per-user temporally aggregated performance measurements. Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel). Time series are visualized using a special Java applet that displays a chart and allows scrolling and zooming for more careful examination of the data."* The preceding text excerpt

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clearly indicates that the downstream messages are stored in a format which is viewable to the user, while the upstream messages are not.) (Page 97, Paragraph 3).

As per Claim 5, Anerousis discloses a file system for storing the XML file generated in the statistical result value storage unit (i.e. "*We have found that the Marvel system has many advantages over commercial network management applications because performance aggregations can be stored and accessed at any time.*" The preceding text excerpt clearly indicates that the data files may be stored at any time, which indicated the presence of a file system which would facilitate the storing.) (Page 97, Paragraph 2).

As per Claim 6, Anerousis discloses an input unit for receiving user input (i.e. "*When the event subsystem is fully integrated with Marvel, the SAIL operator will have the capability of browsing through large numbers of event types, subscribing to receive events of interest, and linking incoming notifications with audio-visual effects in applets running inside the client. An event log browsing facility is also provided for examining detailed event traces that are not transmitted to the client. Of particular interest to the SAIL management system are events that notify the operator of unusual high error rates at a customer's premise, high utilization at a terminal server site, and individual customer activity.*" The preceding text excerpt clearly indicates that user input is received through an administrative utility in order to browse and query.) (Page 99, Paragraph 3); an administrator interface enabling monitoring of the target table stored in the database and the XML file stored in the file system according to user input (i.e. "*When the event subsystem is fully integrated with Marvel, the SAIL operator will have the capability of browsing through large numbers of event types, subscribing to receive events of interest, and linking incoming notifications with audio-visual effects in applets running inside the client. An event log browsing facility is also provided for examining detailed event traces that are not transmitted to the client. Of particular interest to the SAIL management system are events that*

*notify the operator of unusual high error rates at a customer's premise, high utilization at a terminal server site, and individual customer activity.*" The preceding text excerpt clearly indicates that target tables/information in the database may be monitored for certain event occurrences.) (Page 99, Paragraph 3); and a reference unit for executing data of the target table stored in the database to allow monitoring by the user (i.e. *"When the event subsystem is fully integrated with Marvel, the SAIL operator will have the capability of browsing through large numbers of event types, subscribing to receive events of interest, and linking incoming notifications with audio-visual effects in applets running inside the client. An event log browsing facility is also provided for examining detailed event traces that are not transmitted to the client. Of particular interest to the SAIL management system are events that notify the operator of unusual high error rates at a customer's premise, high utilization at a terminal server site, and individual customer activity."* The preceding text excerpt clearly indicates the data in a target table may also be executed to allow for browsing/monitoring.) (Page 99, Paragraph 3).

As per Claim 7, Anerousis discloses a method for statistically processing messages transmitted and received between a Headend, including a network controller for controlling network paths (i.e. *"Sail consists of a head-end router which multiplexes all user traffic on the CATV channel a terminal server, and cable modems (one per user) that terminate the upstream and downstream channels and route the collected packets onto a local Ethernet on which the user has connected a number of PCs or workstations...We use one Marvel server for every group of users served by the same cable operator (i.e. that share the same head-end). These servers operate at level 1. At the second level of the hierarchy, another Marvel server provides global monitoring statistics for the entire Sail network."* The preceding text excerpt clearly indicates that messages transmitted between a headend, including a network controller, are statistically processed.) (Page 96, Paragraph 3), for providing cable broadcasting and a receiver connected to the Headend through a cable network (i.e. *"Sail consists of a head-end router which multiplexes all user traffic on the CATV*



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*channel a terminal server, and cable modems (one per user) that terminate the upstream and downstream channels and route the collected packets onto a local Ethernet on which the user has connected a number of PCs or workstations...We use one Marvel server for every group of users served by the same cable operator (i.e. that share the same head-end). These servers operate at level 1. At the second level of the hierarchy, another Marvel server provides global monitoring statistics for the entire Sail network."* The preceding text excerpt clearly indicates that broadcasting and browsing are provided, and that the network controller and a receiver are connected to the head-end.) (Page 96, Paragraph 3), the method comprising: compiling messages transmitted and received through the network controller (i.e. *"Sail consists of a head-end router which multiplexes all user traffic on the CATV channel a terminal server, and cable modems (one per user) that terminate the upstream and downstream channels and route the collected packets onto a local Ethernet on which the user has connected a number of PCs or workstations...We use one Marvel server for every group of users served by the same cable operator (i.e. that share the same head-end). These servers operate at level 1. At the second level of the hierarchy, another Marvel server provides global monitoring statistics for the entire Sail network."* The preceding text excerpt clearly indicates that the messages from which the statistics are formed are upstream and downstream messages passed through a network controller.) (Page 96, Paragraph 3), separating the compiled messages into downstream and upstream messages (i.e. *"Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel)...An event log browsing facility is also provided for examining detailed event traces that are not transmitted to the client."* The preceding text excerpt clearly indicates that the messages are divided into downstream messages (e.g. messages about the downstream characteristics associated with and viewable by the user) and upstream messages (e.g. other messages associated with the network and which are not viewable to the users).) (Page 97, Paragraph 3; Page 99, Paragraph 3), and performing storage by converting into a database

format according to the divided items (i.e. *"In addition to the above performance summarization features we also support customer views through objects that represent "user profiles". These objects combine account information from the user registration database with per-user temporally aggregated performance measurements. Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel). Time series are visualized using a special Java applet that displays a chart and allows scrolling and zooming for more careful examination of the data."* The preceding text excerpt clearly indicates that the downstream messages are stored in a format which is viewable to the user, while the upstream messages are not.) (Page 97, Paragraph 3);

performing statistical processes according to statistical processing function execution periods established through an administrator interface based on the stored data (i.e.

*"Summarizing performance such as bandwidth usage in this environment is very attractive because not only does it give statistics for larger sets of the user population, but also helps in planning system capacity and the number of served users at every branch of the cable distribution system. In addition measuring the error rates for different groups of users can help to identify areas with transmission problems and sometimes pinpoint the location of the problem...In addition to the above performance summarization features we also support customer views through objects that represent "user profiles". These objects combine account information from the user registration database with per-user temporally aggregated performance measurements. Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel). Time series are visualized using a special Java applet that displays a chart and allows scrolling and zooming for more careful examination of the data."* The preceding text excerpt clearly indicates that statistical processes are performed on the data according to user requests through a an interface.) (Page 97, Paragraphs 1, 3), and storing results of the processes in a memory (i.e. *"We have found that the Marvel system has many advantages over commercial network management applications because performance aggregations can*

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*be stored and accessed at any time...In addition to the above performance summarization features we also support customer views through objects that represent "user profiles". These objects combine account information from the user registration database with per-user temporally aggregated performance measurements. Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel). Time series are visualized using a special Java applet that displays a chart and allows scrolling and zooming for more careful examination of the data."* The preceding text excerpt clearly indicates that the results of the processes are formatted and stored in memory for further browsing.) (Page 97, Paragraphs 2-3); generating a file in a structural document format so as to fit the results file generated for statistical processes to the administrator's viewpoint while a data structure of an original table is maintained (i.e. "We have found that the Marvel system has many advantages over commercial network management applications because performance aggregations can be stored and accessed at any time...In addition to the above performance summarization features we also support customer views through objects that represent "user profiles". These objects combine account information from the user registration database with per-user temporally aggregated performance measurements. Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel). Time series are visualized using a special Java applet that displays a chart and allows scrolling and zooming for more careful examination of the data." The preceding text excerpt clearly indicates that aggregated views of the data (e.g. result sets of data to particular statistical processes) may be stored while the original, non-aggregated data is maintained. Also note that in order for the data to be accessible from the database, as the text excerpt demonstrates it is, it must be stored in a predetermined format which is readable by the database.) (Page 97, Paragraphs 2-3), and thereby storing the data stored in the memory in a target table (i.e. "We have found that the Marvel system has many advantages over commercial network management applications because performance aggregations can be stored and accessed at

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any time...In addition to the above performance summarization features we also support customer views through objects that represent "user profiles". These objects combine account information from the user registration database with per-user temporally aggregated performance measurements. Every such object generates a web page that a user can access to view his/her account status together with a time series of their bandwidth usage and observed quality of service (transmission error rates in the downstream channel). Time series are visualized using a special Java applet that displays a chart and allows scrolling and zooming for more careful examination of the data." The preceding text excerpt clearly indicates that the data may be stored in the database (e.g. stored as a target table.) (Page 97, Paragraphs 2-3); and parsing a file expressing generated statistical result data and storing values corresponding to elements as a target table (i.e. "When the event subsystem is fully integrated with Marvel, the SAIL operator will have the capability of browsing through large numbers of event types, subscribing to receive events of interest, and linking incoming notifications with audio-visual effects in applets running inside the client. An event log browsing facility is also provided for examining detailed event traces that are not transmitted to the client. Of particular interest to the SAIL management system are events that notify the operator of unusual high error rates at a customer's premise, high utilization at a terminal server site, and individual customer activity." The preceding text excerpt clearly indicates that the statistical data may be browsed, and further parsed and aggregated in order to be stored as further views in the database.) (Page 99, Paragraph 3).

As per Claim 9, Anerousis discloses executing the generated target table using a predetermined program to monitor statistical results (i.e. "When the event subsystem is fully integrated with Marvel, the SAIL operator will have the capability of browsing through large numbers of event types, subscribing to receive events of interest, and linking incoming notifications with audio-visual effects in applets running inside the client. An event log browsing facility is also provided for examining detailed event traces that are not transmitted to the client. Of particular interest to the SAIL management system are events that notify the operator of unusual high error rates at a customer's premise, high

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*utilization at a terminal server site, and individual customer activity."* The preceding text excerpt clearly indicates the data in a target table may also be executed to allow for browsing/monitoring.) (Page 99, Paragraph 3).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 8, and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Anerousis in view of McHugh et al., ("Proceedings of the 25th VLDB Conference", Edinburgh, Scotland, 1999 and referred to hereinafter as McHugh).

As per Claims 2 and 10, Anerousis fails to disclose that the structural document format is an XML file structure.

McHugh discloses that the structural document format is an XML file structure (i.e. *"While all of the usual problems associated with cost-based query optimization apply to XML-based query languages, a number of additional problems arise, such as new kinds of indexing, more complicated notions of database statistics, and vastly different query execution strategies for different databases. We define appropriate logical and physical query plans, database statistics, and a cost model, and we describe plan enumeration including heuristics for reducing the large search space."* The preceding text excerpt clearly indicates that an XML database may be used to store statistical data.) (Abstract).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Anerousis with the teachings of McHugh to include that the structural document format is an XML file structure with the motivation of providing storage in a format which permits tagging, nesting, and referencing of elements (McHugh, Page 1, Column 1, Introduction).

As per Claim 8, Anerousis discloses monitoring a file to checks statistical results (i.e. *"When the event subsystem is fully integrated with Marvel, the SAIL operator will have the capability of browsing through large numbers of event types, subscribing to receive events of interest, and linking incoming notifications with audio-visual effects in applets running inside the client. An event log browsing facility is also provided for examining detailed event traces that are not transmitted to the client. Of particular interest to the SAIL management system are events that notify the operator of unusual high error rates at a customer's premise, high utilization at a terminal server site, and individual customer activity."* The preceding text excerpt clearly indicates the data in a target table may also be executed to allow for browsing/monitoring.) (Page 99, Paragraph 3).

Anerousis fails to disclose that the generated structural document format is XML.

McHugh discloses that the generated structural document format is XML (i.e. *"While all of the usual problems associated with cost-based query optimization apply to XML-based query languages, a number of additional problems arise, such as new kinds of indexing, more complicated notions of database statistics, and vastly different query execution strategies for different databases. We define appropriate logical and physical query plans, database statistics, and a cost model, and we describe plan enumeration including heuristics for reducing the large search space."* The preceding text excerpt clearly indicates that an XML database may be used to store statistical data.) (Abstract).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Anerousis with the teachings of McHugh to include that the generated structural document format is XML with the motivation of providing storage in a format which permits tagging, nesting, and referencing of elements (McHugh, Page 1, Column 1, Introduction).

### ***Points of Contact***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Hicks whose telephone number is (571) 272-2670. The examiner can normally be reached on Monday - Friday 8:30a - 5:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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